REMARKS

Claims 1-6 are pending in this application. Claim 4 has been amended to correct an obvious typographical error.

No new matter has been added within the meaning of 35 U.S.C. §132. Therefore entry of the amendment is requested.

In view of the amendments and remarks set forth herein, further and favorable consideration is respectfully requested.

I. Claim Objection

Claim 4 stands objected to on the basis of a misspelling of the term "as." Correction has been made and withdrawal of the objection is requested.

II. Rejection under 35 U.S.C. §103(a) of claims 1-4 and 6

The rejection is based on McNallan et al. (U.S. Patent No. 6,579,833) in view of Matsui et al. (*Three-dimensional nanostructure fabrication by focused-ion-beam chemical vapor* deposition, J. Vac. Sci. Technol. B 18(6), Nov/Dec 2000, p. 3181-3184). McNallan et al. teach a method of producing a metal carbide surface (SiC) by heating to a temperature of 800-1200°C in the presence of a gas mixture containing chlorine, hydrogen, and argon in order to convert the SiC surface into a carbon film, which may be amorphous. Matsui et al. disclose using an electron or ion beam to heat a region of a substrate such that amorphous carbon is deposited in the region by the decomposition of a carbon precursor. The Examiner is of the position that it would have been obvious to one of skill in the art at the time of the invention to use the radiation source of Matsui et al. to heat the SiC surface of McNallan et al. in order to form amorphous carbon deposits on localized portions of the surface, rather than coating the entire surface.

Applicant respectfully traverses this rejection. The cited references do not establish a prima facie case of obviousness against the presently pending claims.

To establish a prima facie case of obviousness, the PTO must satisfy three requirements. First, as the U.S. Supreme Court recently held in KSR International Co. v. Teleflex Inc. et al., Slip Opinion No. 04-1350, 550 U.S. (April 30, 2007), "a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. ...it [may] be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. ...it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new

invention does... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." (KSR, supra, slip opinion at 13-15). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. Amgen Inc. v. Chugai Pharm. Co., 18 USPQ 1016, 1023 (C.C.P.A 1970). Lastly, the prior art references must teach or suggest all the limitations of the claims. In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

The cited references do not teach all the claim limitations of the instant claims, and the combination of references does not render the claims obvious. McNallan et al. teach a process for producing continuous carbon layering on metal carbides, such as SiC, i.e. the carbon remains as a continuous covering layer on the SiC. Matsui et al. relates to Si wafers, which is a completely different technical field unrelated to sintered SiC ceramic materials of the instant subject matter. Matsui et al. teach Si wafers which are coated with carbon with carbon by focused-ion-beam chemical vapor deposition to create three-dimensional nanostructures on the surface of Si wafers.

In contrast, the instant claims are directed to local carbon structures by converting metal carbide into carbon. Specifically, locally restricted carbon structures are created by local conversion of the SiC basic material in the surface, rather than by coating or deposition. Furthermore, the instant claims use a laser or an electron beam and do not use an ion beam. Therefore, McNallan et al. in view of Matsui et al. do not teach each and every element of the subject matter claimed in the presently pending claims as required for obviousness under 35 U.S.C. § 103(a). Furthermore, the cited combination of references does not render each and every element of the claims obvious to one of skill in the art. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

II. Rejection under 35 U.S.C. §103(a) of claims 1, 5 and 6

The basis of this rejection is Kusunoki et al. (*Aligned carbon nanotube film self-organized on SiC wafer,* Jpn. J. Appl. Phys. Vol. 37 (1998), L605-L606) and Matsui et al. (above). The Examiner states that Kusunoki et al. teach a process for producing a shaped

body characterized in that a material having metal carbide (SiC) surface is heated to a temperature of about 1700°C under vacuum in order to decompose the SiC to form a carbon nanotube film. Matsui et al. teach using an electron or ion beam to heat a defined region by the decomposition of a carbon precursor. The Examiner alleges that it would have been obvious to once of skill in the art at the time of the invention to use the radiation source of Matsui et al. to heat the SiC surface of Kusunoki et al. in order to form nanostructured carbon deposits on localized portions of the surface.

Applicant respectfully traverses this rejection. The cited references do not establish a prima facie case of obviousness against the presently pending claims.

To establish a prima facie case of obviousness, the PTO must satisfy three requirements. First, as the U.S. Supreme Court recently held in KSR International Co. v. Teleflex Inc. et al., Slip Opinion No. 04-1350, 550 U.S. (April 30, 2007), "a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. ...it [may] be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. ...it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." (KSR, supra, slip opinion at 13-15). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. Amgen Inc. v. Chugai Pharm. Co., 18 USPQ 1016, 1023 (C.C.P.A 1970). Lastly, the prior art references must teach or suggest all the limitations of the claims. In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

The cited references do not teach all the claim limitations of the instant claims, and the combination of references does not render the claims obvious. The teachings of Kusunoki et al. relate to a completely different technical field, i.e., single crystal SiC

wafers for the semiconductor industry. Applicant submits that nowhere are sintered SiC ceramic materials discussed. The SiC wafers are coated with a specific carbon layer consisting of carbon nanotubes. The result is an aligned carbon nanotube film self organized on a SiC wafer. The layer or film of carbon nanotubes is a continuous layer and differs locally restricted carbon structures obtained by conversion of metal carbide in restricted regions. Matsui et al. relates to Si wafers, which is a completely different technical field unrelated to sintered SiC ceramic materials. Matsui et al. teach Si wafers which are coated with carbon with carbon by focused-ion-beam chemical vapor deposition to create three-dimensional nanostructures on the surface of Si wafers.

In contrast, the instant claims are directed to local carbon structures by converting metal carbide into carbon. Specifically, locally restricted carbon structures are created by local conversion of the SiC basic material in the surface, rather than by coating or deposition. Furthermore, the instant claims use a laser or an electron beam and do not use an ion beam. Therefore, Kusunoki et al. in view of Matsui et al. do not teach each and every element of the subject matter claimed in the presently pending claims as required for obviousness under 35 U.S.C. § 103(a). Furthermore, the cited combination of references does not render each and every element of the claims obvious to one of skill in the art. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

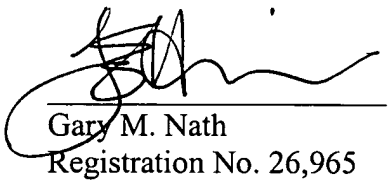
CONCLUSION

In view of the foregoing, Applicant submit that the pending claims are in condition for allowance. Early notice to that effect is earnestly solicited. The Examiner is invited to contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicant petitions for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

THE NATH LAW GROUP



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